

ART. VIII.—*On the Employment of the Chloride of Sodium in the Treatment of Intermittent Fever.* By W. P. LATTIMORE, M. D.

THE discovery of some agent capable of serving as a substitute for Peruvian bark, or for its active principle, quinia, in the treatment of intermittent fever, has long been desired, in consequence of the high price of the sulphate of quinine, and the great adulteration of the salt to which this has given rise. The amount paid for quinine alone, is no small item in the annual expenses of the country physician; and this is likely to be increased, as it is said that a company of English druggists have monopolized the entire crop of Peruvian bark for many years to come.

In view of the interest necessarily felt in this subject, we have thought it might not prove uninteresting to the readers of the *American Journal*, to give the results of investigations made by the eccentric Piorry, upon the use of common salt in the treatment of intermittent fever. The investigations were commenced at La Pitié, and continued at La Charité, where they were witnessed by the writer.

The attention of M. Piorry was drawn to the subject by a memoir, presented to the French Academy of Medicine, in July, 1850; by Dr. Scelle Montdezert, entitled, *Practical Considerations upon the Treatment of Intermittent Fevers, and upon the mode of action of the Salts of Quinia, and of the Chloride of Sodium.*

In this memoir, M. Scelle Montdezert supposes that every paroxysmal fever is due to the presence of fibrin in the venous blood; this fluid, in the normal state, being deprived of fibrin by the process of assimilation. That the salts of quinia owe their efficacy as anti-periodics to the fact that they dissolve this fibrin abnormally present, thus restoring the venous blood to its normal conditions. In casting about, then, for a substitute, he saw that nature had largely disseminated both potassa and soda, each possessing, in a remarkable degree, solvent properties. Seeking, among the various combinations of each, that one which, uniting with the divers elements of the blood, should furnish the fewest insoluble compounds, he naturally selected the chloride of sodium, which forms none. He administered it, and then goes on to say:—

“On account of these considerations we experimented without fear of injury, and we declare with satisfaction that the results of its employment are such that salt may now be considered as sharing with the salts of quinia the prerogative of arresting the paroxysms of intermittent fever. It is sufficient to administer half an ounce of it in the morning, before eating, during the apyrexia, in half a glass of infusion of coffee. Its use should be continued for three days.

“Fortunate results, observed during several years, have confirmed our foresight. It is a counter-proof of our opinion, long since emitted, upon the action of the sulphate of quinine, and one which gives the most satisfactory solution of this therapeutical problem.”

M. Scelle Montdezert gives the history of no cases treated by salt, although he alludes to many in which the agent was successfully employed. Under these circumstances the matter came into the hands of M. Piorry, who was one of the committee appointed by the Academy to report upon the memoir, and his cases are the only ones known to us. From these researches it will be seen that the chloride of sodium cures intermittent fever, like the sulphate of quinine, by acting upon the spleen and diminishing its volume, and this sometimes in less than a minute. And in this connection it may be of interest to say a few words in regard to the views of M. Piorry concerning the spleen in intermittent fever, and his method of diagnosing the disease.

He holds that in all paroxysmal fevers the spleen is enlarged; that the anatomical lesion is the cause, the fever only the symptom; that wherever the spleen has a greater length (measuring in a line extending from the middle of the axilla to the anterior superior spinous process of the ileum), than from 31 to 33 lines, intermittent fever exists. Believing thus, the symptoms for him are zero, while the state of the spleen stands at the other end of the scale, and is everything—percussion (pleximetric) of course, being the *experimentum crucis*.

We cannot resist the temptation of here paying a tribute to the skill with which M. Piorry employs percussion in making a diagnosis. With him *auscultation* is but an infant when compared with its full grown brother *percussion*. By its aid he interrogates the abdominal viscera as frequently as the thoracic, and with no less success, for he has brought it to an almost incredible degree of perfection. With his plate of ivory and his flattened fingers' ends he diagnoses almost everything—tumours of the abdomen, abscesses everywhere, aneurisms, &c. All acknowledge the delicacy and accuracy of his test, while the looker on is lost in admiration, and wonders whether all his senses are not really concentrated in the ends of his fingers, which by constant drumming have at length become the very reverse of tapering.

Wishing, then, to experiment with salt, a few cases of intermittent fever (old staggers), contracted in Algiers were selected as subjects. Behold, then, Piorry at the bedside. The patient asserts that he contracted the fever and ague several years since in Africa; that he has frequently been cured; but that the disease has constantly reappeared at the end of fifteen days or one month at farthest. The type of the fever is tertian. The spleen is percussed and found to be abnormally dull throughout its whole extent; the entire splenic region is sensitive upon percussion, particularly over the dullest points; and each blow is accompanied by marked contortions of the countenance. This sensibility extends but little beyond the region of dullness, which last occupies an extent of fifty-three lines, measuring in the direction indicated above. To this patient a drachm of salicine is administered without producing any change in the dimensions of the spleen. A few min-

utes subsequently, half an ounce of salt mixed with a cup of soup is given, and upon carefully percussing the splenic region at the end of four minutes, this organ is found diminished one inch, from above downwards. The next day the spleen is found to be of the same size, but upon the administration of a second dose of salt, it suddenly contracts and measures nearly three-quarters of an inch less than yesterday. The resonance throughout the entire organ has increased while the sensibility has diminished. The succeeding day, the attack of fever is very slight, and upon giving a third dose, the disease does not return; and when seen six weeks subsequently, the patient is still free from his African enemy. Thus we see that a diminution of twenty-four lines in the length of the spleen was the result of the medicament, the fever being cured more effectually than ever before; *i. e.*, the patient had remained free from all relapse for the space of six weeks; one month having previously been the longest period of immunity.

We have the notes of seven cases of well-marked intermittent fever, in all of which the administration of the chloride of sodium was followed by rapid decrease in the volume of the spleen and cure of the febrile symptoms. We also have the record of three cases in which salt was unsuccessfully used; in one of these, the sulphate of quinine effected a cure; in a second it too failed, while in the third it was not tried. These were all well-marked cases of intermittent fever, such as would pass muster in any of our own malarious districts.

Let it be remembered that most of the fever and ague met with in the Parisian hospitals, is of long standing, and imported from the malarious districts of Algiers, which generate a form of the disease even worse than that found amid the marshes on the banks of the famed Maumee; that these cases have been treated again and again, have been cured now by the sulphate of quinine, now by arsenic, but only to reappear upon the slightest exposure or imprudence; in short, to recur as only *the shakes* can recur.

We witnessed many of the experiments of M. Piorry, and in the great majority of them, the fever yielded to salt quite as readily as to the salts of quinia. And as to the theory of M. Piorry, the spleen diminished under the use of the remedy, *pari passu*, with the febrile symptoms, in every case where the disease was cured, proving that this organ really shows the influence of remedies over this class of fevers—that it is, as it were, a febrile barometer—for the diminution of the spleen is a constant phenomenon accompanying the cure of the disease, whatever be the curative agent employed.

M. Piorry's method of administering the chloride of sodium is, to give half an ounce in a cup of thin soup during the apyrexia and fasting. It usually agrees with the stomach perfectly well, but in some few cases we have seen it excite vomiting and diarrhœa. Three doses commonly suffice to effect a cure, the first two to be taken on succeeding days, and the third after an interval of one day. Should the spleen be undiminished in volume by the first dose, we may be sure that the remedy will not cure the disease; and the same is true

of all the antiperiodics. Excepting in rare cases, the diminution of the spleen occurs immediately upon the administration of the remedy (salt or sulph. quinine), and may frequently be detected within one minute, after which the organ remains stationary until a second dose of the medicament be administered.

Is the chloride of sodium as efficient an antiperiodic as the sulphate of quinine? Are the cures effected by the one as permanent as those effected by the other? The first question can only be answered by those possessing a larger field of observation than the writer. May we not hope for a solution from those of our profession who observe the disease too largely either for comfort or pleasure? In regard to the permanency of the cures, we apprehend there is not much difference, be the medication what it may; for relapses are only too common after the greatest care and most patient attention.

Should the discovery prove as useful and applicable as it promises, the benefit accruing from it will be immense. If it be capable of taking the place of the sulphate of quinine in the majority, or even in one-half the cases of intermittent fever, therapeutics will be largely the gainer.

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ART. IX.—*New Views concerning the Nature and Cause of Tubercular Deposits.* By MATTHEW TROY, M. D., of Whiteville, North Carolina.

THERE is no disease, perhaps, in regard to the pathology of which a greater number of discordant theories have been advanced than that of tubercular consumption. This has arisen as well from its frequency and almost invariable fatality—which would naturally lead the profession to direct their most earnest attention to its investigation, in the hope of discovering for it some certain means of cure or prevention—as from the tangible nature of the product by which it is characterized, and which seems to invite investigation, by promising an easy and ready explanation of its nature and cause. In but few diseases can we lay hold of the *materies morbi* itself. But our being able to do so in the case of consumption seems to have been of but little advantage in leading us to correct views in regard to its true nature and treatment.

It is not my intention to attempt a history of the disease, or to discuss the comparative merits of the several theories that have been advanced in relation to it; but shall merely, previously to offering my own views, give a brief notice of the present opinions of the profession as to the pathology of tuberculous diseases generally.

Three distinct theories are still held by respectable portions of the medical profession. Two of these are known as those of Andral and Carswell, the